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Please find below and/or attached an Office communication concerning this application or proceeding.

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES
Paper No. 20
Application Number: 09/186,270
Filing Date: November 4, 1998
Appellants: Brian D. Gantt et al.

George H. Gates, Reg. No. 33,500, for appellants.

EXAMINER'S ANSWER

This is in response to the third supplemental appeal brief ("brief", Paper No. 19) filed December 23, 2002. The original brief (Paper No. 11) was filed on January 10, 2002; the examiner responded to the original brief with a non-final rejection (Paper No. 12). The first supplemental appeal brief (Paper No. 14) was filed in response to the non-final rejection. The second and third supplemental appeal briefs (Paper Nos. 17 and 19, respectively) were filed after the applicants were notified that the first and second supplemental appeal briefs were defective (Paper Nos. 15 and 18, respectively).

(1) Real Party In Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The brief states that there are no other appeals or interferences which will directly affect, be directly affected by, or have bearing on, the Board's decision in the present appeal.

(3) Status of Claims

The agreement of the status of claims contained in the brief is correct.

(4) Status of Amendments

The appellants' statement of the status of amendments contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellants' statement of the issues in the "Arguments" section of the brief is correct.

(7) Grouping of Claims

The brief of the appellants states that the rejected claims do not stand or fall together, that each claim group is independently patentable.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

5,408,606 VENOLIA 10-1995
5,408,606 ECKART 4-1995
5,623,418 ROSTOKER 4-1997

(10) Grounds of Rejection

The grounds of rejection, as stated in "The Examiner's Office Action-Claim Rejections" section of the brief, are correct and are included below:

Allowable Subject Matter

1. Claims 2-3, 5-13, 16-20, 22-23, 26-27, 29-44, 46-47, 52-64 and 69-81 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent

form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 4, 21, 25, 28, 45, 48-51 and 65-68 are rejected under 35 U.S.C. 103(a) as being unpatentable by Venolia (U.S. Pat. No. 5,463,722).

4. Venolia, in disclosing automatic alignment of objects in two-dimensional and three-dimensional display space using an alignment field gradient, also discloses, with respect to claims 1, 25, 48 and 65, a method of operating a computer aided design system in presumptive mode, comprising the steps of:

- moving a selected graphic object (Venolia's "first object") relative to a graphic pointing symbol (col.5, ll.5-8);
- determining when the selected graphic object is within a predetermined proximity of an underlying graphic object (Venolia's "second object", col.5, ll.8-11);
- manipulating the selected graphic object into a geometric relationship with the underlying graphic object according to predetermined geometric rules ("calculating a current position for the first object which is displayed from a cursor dictated position by an amount which

is determined as if the first object was under the gradual influence of an alignment field emanating from the second object", col.5, ll.8-11); and

- dynamically updating the geometric relationship based on movement of the graphic pointing symbol while the graphic pointing symbol remains within the predetermined proximity of the underlying graphic object (col.5, ll.8-11; this element of the claim is implied because if the position of the cursor is related to the position of the first object, and the position of the first object is related to the position of the second object through the alignment field, the geometric relationship of the cursor to the second object is dynamically updated).

5. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to determine when the selected graphic object is within a predetermined proximity of an underlying graphic object, manipulate the selected graphic object into a geometric relationship with the underlying graphic object according to predetermined geometric rules, and dynamically update the geometric relationship based on movement of the graphic pointing symbol while the graphic pointing symbol remains within the predetermined proximity of the underlying graphic object. This would facilitate manipulation of objects in 3D space (Venolia, col.3, ll.3-20).

6. The other claims in this rejection will now be considered. Concerning claims 4 and 28, Venolia discloses positioning the selected graphic object at a predetermined offset relative to the underlying graphic object as part of the manipulating step (col.5, ll.8-11).

7. Regarding claims 21 and 45, Venolia discloses a method of operating a computer aided

design system, comprising the steps of:

- providing at least one graphic object to be selected for insertion into a graphic design (col.9, ll.30-37);
    - displaying and moving a selected graphic object with a graphic cursor moved within the graphic design (col.10, ll.21-27);
- when the selected graphic object is within a predetermined proximity with respect to one or more underlying graphic objects, automatically manipulating the selected graphic object into a geometric relationship with the underlying graphic object (col.5, ll.8-11); and
    - dynamically updating the geometric relationship based on movement of the graphic cursor while the graphic cursor remains within the predetermined proximity of the underlying graphic object (col.5, ll.8-11; as stated in paragraph 5 above, this element is implied).

8. With respect to claims 49 and 66, Venolia discloses computer input device control of a pointing symbol (col.5, ll.5-8).

9. Concerning claims 50 and 67, Venolia discloses the points of interest being determined by predefined rules (col.5, ll.5-8).

10. Regarding claims 51 and 68, Venolia discloses the predefined rules limiting selection of the first graphic object (col.10, ll.21-27).

11. In view of the foregoing, it is concluded that the above claims have been rendered unpatentable by Venolia.

12. Claims 14-15 and 38-39 are rejected, under 35 U.S.C. 103(a) as being unpatentable by

Venolia in view of Eckart (U.S. Pat. No. 5,408,606).

13. Venolia does not disclose, with respect to claims 14-15 and 38-39, partially deleting only selected ones of a plurality of graphic objects corresponding to the objects' respective clip regions. However, this is disclosed by the Eckart computer graphics system at col.1, ll.26-33.

14. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to arrange for partial deletion of only selected ones of a plurality of graphic objects corresponding to the objects' respective clip regions. Such a combination of these two references would enhance clarity and eliminate waste by cutting away parts of objects that lie outside the viewport (Eckart, col.1, ll.31-33).

15. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable by Venolia in view of Rostoker et al. ("Rostoker," U.S. Pat. No. 5,623,418).

16. Venolia does not disclose a database/file structure in its CAD system. Such a structure is disclosed by the Rostoker CAD system:

- The display device is disclosed at **1606** in FIG.29;
- The data base, the object files and the design files are disclosed at col.9., ll.27-33--the object files perform the same function as the applicants' design files; and
- The processor is disclosed at **2401** in FIG.29.

17. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to arrange for a database structure. Such a combination of these two references would ensure that the object simulation structures are always current and representative of the schematic diagram as displayed at a given moment (Rostoker, col.10, ll.18-

21).

(11) Response to Arguments in Brief

A. Appellants' Independent Claims 1, 21, 24-25 and 45 Are Not Patentable Over The References

It is believed that the last Office action adequately demonstrates how the references fulfill each and every element of these independent claims. But in this section of the supplemental brief, the appellants' arguments make three points: (1) Venolia merely describes an alignment field gradient which emanates from objects surrounding a manipulated object. (2) Moreover, the relationship between the objects in Venolia is not based on the position of the pointing symbol relative to the underlying object, but is based on the proximity of the objects themselves. (3) Further, the relationship between the objects in Venolia is not dynamically updated while the cursor remains within a predetermined proximity of the underlying object. The examiner shall consider each of these arguments separately below:

(1) Venolia merely describes an alignment field gradient which emanates from objects surrounding a manipulated object.

The appellants imply that since their invention provides operational advantages over Venolia and is therefore more than an alignment field gradient, Venolia cannot properly be used to disqualify their invention from patentability. However, 35 U.S.C. §§ 102 and 103 do not require that prior art references be the same as an entire patent application in order for the prior art reference to disqualify the invention described in the application from patentability. 35 U.S.C. §§ 102 and 103 only require that prior art references disclose the elements of an application's claims in order to disqualify the application.

Indeed, Venolia and Rostoker disclose the elements of this application's claims. With

respect to claims 1 and 25, Venolia discloses a method of operating a computer aided design system in presumptive mode, comprising the steps of:

- moving a selected graphic object (Venolia's "first object") relative to a graphic pointing symbol (col.5, ll.5-8);
- determining when the selected graphic object is within a predetermined proximity of an underlying graphic object (Venolia's "second object", col.5, ll.8-11);
- manipulating the selected graphic object into a geometric relationship with the underlying graphic object according to predetermined geometric rules ("calculating a current position for the first object which is displayed from a cursor dictated position by an amount which is determined as if the first object was under the gradual influence of an alignment field emanating from the second object", col.5, ll.8-11); and
- dynamically updating the geometric relationship based on movement of the graphic pointing symbol while the graphic pointing symbol remains within the predetermined proximity of the underlying graphic object (col.5, ll.8-11; this element of the claim is implied because if the position of the cursor is related to the position of the first object, and the position of the first object is related to the position of the second object through the alignment field, the geometric relationship of the cursor to the second object is dynamically updated).

Regarding claims 21 and 45, Venolia discloses a method of operating a computer aided design system, comprising the steps of:

- providing at least one graphic object to be selected for insertion into a graphic design (col.9,

ll.30-37);

- displaying and moving a selected graphic object with a graphic cursor moved within the graphic design (col.10, ll.21-27);
- when the selected graphic object is within a predetermined proximity with respect to one or more underlying graphic objects, automatically manipulating the selected graphic object into a geometric relationship with the underlying graphic object (col.5, ll.8-11); and
- dynamically updating the geometric relationship based on movement of the graphic cursor while the graphic cursor remains within the predetermined proximity of the underlying graphic object (col.5, ll.8-11; as stated in paragraph 5 above, this element is implied).

Finally, with respect to claim 24, Rostoker discloses a database/file structure.

- The display device is disclosed at **1606** in FIG.29;
- The data base, the object files and the design files are disclosed at col.9., ll.27-33--the object files perform the same function as the applicants' design files; and
- The processor is disclosed at **2401** in FIG.29.

Since Venolia and Rostoker fulfill the requirement that prior art references disclose the elements of an application's claims with respect to the instant application, Venolia and Rostoker are sufficient to reject the appellants' claims, and the rejections of claims 1, 21, 24-25 and 45 still stand.

(2) Moreover, the relationship between the objects in Venolia is not based on the position of the pointing symbol relative to the underlying object, but is based instead on the proximity of the objects themselves.

The appellants imply here that Venolia does not fulfill the claim element "moving a selected graphic object relative to a graphic pointing symbol." However, interpreted broadly but

reasonably, fulfillment of this claim element by Venolia does not require a specific numerical relationship of the pointing symbol to the underlying object (as the appellants would say, *basing* the position of the pointing symbol relative to the underlying object), but only that there is a relationship between the pointing symbol and the underlying object. Since in col.5, ll.5-8 of Venolia, the cursor actually moves the first object, the selected graphic object (first object) is being moved relative to the graphic pointing symbol (the cursor). Therefore Venolia fulfills this claim element, and this part of the rejections is maintained.

(3) Further, the relationship between the objects in Venolia is not dynamically updated while the cursor remains within a predetermined proximity of the underlying object.

The appellants' attorney may not agree with the idea that the relationship between the objects in Venolia is dynamically updated while the cursor remains within a predetermined proximity of the underlying object because if the position of the cursor is related to the position of the first object, and the position of the first object is related to the position of the second object through the alignment field, the geometric relationship of the cursor to the second object is dynamically updated (see Venolia, col.5, ll.8-11).

However, further support for Venolia's fulfillment of this claim element can be found in FIG.5 of Venolia. There is a geometric relationship between a first object (P in FIG.5) and a second object (Q in FIG.5). When the cursor drags object P toward object Q, the geometric relationship between the selected graphic object Q and the (position of the) underlying graphic object P is dynamically updated based on movement of the graphic pointing symbol (cursor) while the graphic pointing symbol remains within the predetermined proximity of the underlying graphic object. (In order to move underlying graphic object P toward object Q, it is

predetermined that the cursor has to be placed on object P in order to drag it toward object Q).

Also, not every independent claim recites "predetermined proximity." For example, all claim 24 requires is that the graphic cursor is manipulated "in proximity" with one of said underlying graphic objects. The last paragraph demonstrated how Venolia fulfills this clause.

Finally, the claims do not specify if updating occurs when the cursor is outside the predetermined proximity. Whether or not Venolia updates when outside the predetermined proximity, Venolia updates when inside the predetermined proximity, and the claim limitations are fulfilled. Therefore, this part of the rejections—and, consequently, the rejection of the independent claims in their entirety--is maintained.

B. Dependent Claims 4 and 28 Are Not Patentable over the Prior Art

These dependent claims were submitted by the appellant to be allowable based on the theory that they are dependent on supposedly allowable independent claims 1 and 25, respectively. However, since claims 1 and 25 were found not to be allowable, allowability of claims 4 and 28 cannot be established based on this theory. Furthermore, since Venolia discloses positioning the selected graphic object at a predetermined offset relative to the underlying graphic object as part of the manipulating step (col.5, ll.8-11), claims 4 and 28 still stand rejected.

C. Dependent Claims 14-15 and 38-39 Are Not Patentable over the Prior Art

These dependent claims were also submitted by the appellant to be allowable based on the theory that they are dependent on supposedly allowable independent claims 1 and 25, respectively. However, since claims 1 and 25 were found not to be allowable, allowability of

claims 14-15 and 38-39 cannot be established based on this theory.

Claims 14 and 38 disclose a clip region within a selected graphic object, and a manipulating step or means which further comprises the step of or means for partially deleting the underlying graphic object according to the clip region.

Claims 15 and 39, which depend on claims 14 and 38, recite that the underlying graphic object comprises a plurality of graphic objects, and the partially deleting step or means further comprises the step of or means for partially deleting only selected ones of the plurality of graphic objects corresponding to the clip region.

The appellants maintain that Eckart merely describes how data that lies outside a viewport can be clipped, but not that the manipulation of a selected graphic object into a geometric relationship with an underlying graphic object according to predetermined geometric rules performs such an operation. This is a requirement of claim 1, on which claims 14 and 15 depend.

However, it is the combination of Venolia and Eckart that is being used to reject claims 14 and 38. In the language of the applicants, Venolia discloses the manipulation of the selected graphic object (Venolia's "first object") into a geometric relation with an underlying graphic object (Venolia's "second object"; col.5, ll.5-11), while Eckart focuses on the separation of objects or parts of objects depending upon their presence or absence within a viewport. If the applicants' selected graphic object is assumed to be within the viewport, then, like applicants' claims 14 and 38, Eckart discloses the selected graphic object's inclusion of a clip region for the purpose of cutting out (in applicants' language, "partially deleting") anything which is not within

the viewport, such as a whole object (e.g., applicants' "underlying object") or part of an underlying object, or part of the selected object (col.1, ll.31-33). Therefore, the rejection of claims 14 and 38 still stand.

With respect to claims 15 and 39, the examiner is persuaded by the applicants' assertion in their brief that neither Venolia nor Eckart or these references combined disclose a selected graphic object which partially deletes only selected ones of the plurality of graphic objects which comprise the underlying graphic object.

However, this element is still obvious. Venolia can be combined with any text editor created before the applicants' filing date (e.g., WordPerfect 5.1, invented c. 1993) to reject these claims. In the case of the text editor, the selected graphic object would be a cursor, and the underlying graphic object would be a page of data, which consists of objects such as words and letters. The cursor has a geometric relation to the page of data, and the user of the text editor can choose a selected place on the page of data and delete any letter on the page he or she chooses. The motivation which would be stated in the text editor reference for combining Venolia with the text editor would be to process words. It is well known that words can be used to describe objects such as those disclosed in Venolia. Therefore, claims 15 and 39, as currently drafted, are still rejectable.

D. Appellants' Independent Claims 48 and 65 Are Not Patentable Over The References

The appellants assert that Venolia does not teach or suggest displaying a first graphic object on a computer, and then displaying at least one point of interest on the computer when a pointing symbol is within a predetermined proximity of the first graphic object. However, the

"first graphic object displayed on the computer" can be found in line 2 of column 5 in Venolia, and the "point of interest displayed on the computer" can be found in line 6 of column 5 in Venolia ("second object"). With respect to the clause in claims 48(b) and 65(b), "when a pointing symbol is within the predetermined proximity of the first graphic object", if the first object is being moved by the cursor, the "predetermined proximity of the pointing symbol" is determined by one of the well-known rules of dragging an object with a cursor: if a cursor is to move an object, it must be touching the object it is moving. Therefore, if the cursor is moving the first object, it is "predetermined" that it must be touching the first object.

The appellants further assert that "Venolia does not identify 'points of interest' on an object when a pointing symbol is within a predetermined proximity of the first graphic object. Instead, the entire object is considered to be 'magnetic', rather than any specific points of interest on the object. Moreover, the magnetic relationship is between two objects, not between a pointing symbol and an object. Finally, Venolia does nothing to identify points of interest, or even magnetic objects themselves, since all objects are considered to be magnetic."

In response, the examiner asserts that there is nothing in claims 48 and 65 that require that the point of interest be dependent upon a pointing symbol being within a predetermined proximity of the first graphic object. Claims 48 and 65 can also be read to mean that the point of interest is displayed all the time, including the instance in which a pointing symbol is within a predetermined proximity of the first graphic object, as Venolia discloses. Also, there is nothing in the claim to exclude all points of an object from being a "point of interest". The applicants' arguments suggest that less than all of the object are points of interest, but this is not supported

by the claim language. In any event, Venolia fulfills these claim elements, and this part of the rejections is maintained.

E. Dependent Claims 49-51 and 66-68 Are Not Patentable over the Prior Art

These dependent claims were submitted by the appellant to be allowable based on the theory that they are dependent on supposedly allowable independent claims 48 and 65, respectively. However, since claims 48 and 65 were found not to be allowable, allowability of claims 49-51 and 66-68 cannot be established based on this theory. Furthermore, with respect to claims 49 and 66, Venolia discloses computer input device control of a pointing symbol (col.5, ll.5-8). Moreover, concerning claims 50 and 67, Venolia discloses the points of interest being determined by predefined rules (col.5, ll.5-8). Finally, regarding claims 51 and 68, Venolia discloses the predefined rules limiting selection of the first graphic object (col.10, ll.21-27). Therefore, claims 49-51 and 66-68 still stand rejected.

F. Conclusion

For the above reasons, it is believed that the rejections in the non-final rejection of March 18, 2002 (Paper No. 12) should be sustained.

Respectfully submitted,

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